

Delibuti

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| 1. Lamellae at first white or pallid. | <i>C. splendidus</i> Pk. |
| Lamellae at first some tint of blue or violet. | 2. |
| 3. Pileus violet-purple. | <i>C. iodes</i> B. & C. |
| Pileus yellow. | <i>C. Berlesianus</i> Sacc. & Cub. |

TWO NEW SPECIES OF SELAGINELLA IN THE SOUTHERN FLORA

BY LUCIEN M. UNDERWOOD

Although the number of species in the *Selaginella rupestris* group has increased from three to sixteen within the limits of the United States through the work of the writer and that of Dr. Georg Hieronymus, of Berlin, the mine does not appear to be exhausted yet. The two following species are representatives of the flora of North Carolina, the first from the sandy barrens of the coastal plain and the second from the highlands at the opposite side of the state.

Selaginella acanthonota sp. nov.

Stem and branches stout, ascending, sending out abundant rootlets from the upper portions, softly hairy at the tips. Leaves in 8-10 regular series, 2 mm. long, gradually tapering into a roughened soft white awn one half to one third their length, with about 12 short irregular cilia on either side of the dorsal groove; strobiles fully 10 mm. long, quadrangular, the sporophylls broadly triangular and ciliate like the stem leaves.

Growing in sand along the coast and near it, North Carolina. A small fragmental specimen of this species was collected many years ago by Mr. Curtis and is in the Torrey herbarium; more abundant material was collected during the summer of 1899 in pine barrens near Wilmington, by Professor C. L. Williamson and has been grown in the conservatories of the New York Botanical Garden. The plant is a close ally of *S. rupestris* but differs notably in the regularly many-ranked leaves, in the dorsal cilia, from which the species receives its name, and in other characters.

Selaginella Sherwoodii sp. nov.

Plants forming densely branched compact tree-like tufts 6-8 cm. high. Stems repeatedly branching, erect or ascending, root-

ing only at the base, rigid, about 1.5 mm. in diameter; leaves about 10-ranked, short, about 1.5 mm. long, closely appressed, grooved dorsally in the lower two thirds, ending in a slender white coiled hair 0.7–0.9 mm. long, and with 8–12 very short minute cilia on each margin; strobiles inconspicuous, less than 5 mm. long, terminal on the branches, the sporophylls similar to the ordinary leaves but wider and graduating into them; microsporangia three-lobed, the microspores pale yellow, rugose-reticulate, 0.44 mm. in diameter; microsporangia round-reniform, the microspores bright yellow, smooth, 44μ in diameter.

Near Highlands, Macon County, North Carolina, altitude 5,000 ft. J. Donnell Smith, 1882; W. L. Sherwood, 1901 and 1902 (type in the New York Botanical Garden).

Specimens of this plant first collected by John Donnell Smith are fairly well represented in D. C. Eaton's collection and more meager specimens are in the Gray herbarium; they have hitherto been confused with *S. tortipila* A. Br. Fine plants of this beautiful species have been collected in 1901 and again in 1902 by Mr. W. L. Sherwood, and these have enabled us to draw up the above description. The plant is allied to *S. tortipila* which it resembles in the coiled or twisted terminal hairs of the leaves. *S. tortipila* was described by Alexander Braun from plants collected in 1841 by Rugel and a cotype of the species is in our herbarium. In place of the slender lax sprawling habit of *S. tortipila* with enlarged though short strobiles, we have here a very compact bushy or tree-like plant with stout stems, many-ranked leaves, and strobiles which are scarcely noticeable as the branches graduate imperceptibly into them without enlargement. There is also a fragmentary specimen of this species in the Gray herbarium collected in South Carolina also by John Donnell Smith so that the species is likely to be found at various places in the higher altitudes of the Southern Appalachians.

VACATION OBSERVATIONS. I

BY FRANCIS E. LLOYD

Displacement of Leaves.—Occasionally a maple twig is found in which the leaves are arranged in decussating whorls of threes. If we accept the explanation that decussating pairs of leaves arise